

Release notes for ENDF/B Development n-034_Se_074
evaluation

ENDF
B-VII.dev

April 26, 2017

- checkr Warnings:

1. A previous error halted parsing of the current section
MAT=3425, MF= 1, MT=451 (1): Parsing stopped

```
ERROR(S) FOUND IN MAT=3425, MF= 1, MT=451
SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER 215 TO 250
```

- checkr Errors:

1. A variable is outside the allowed ENDF range
MAT=3425, MF= 1, MT=451 (0): Variable range

```
ERROR(S) FOUND IN MAT=3425, MF= 1, MT=451
MOD = 1 OUT OF RANGE 0 - 0 RECORD NUMBER 215
```

2. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 2, MT=151 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3425, MF= 2, MT=151
SECTION 2/151 NOT IN DIRECTORY RECORD NUMBER 252
```

3. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 1 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 1
SECTION 3/ 1 NOT IN DIRECTORY RECORD NUMBER 369
```

4. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 2 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 2
SECTION 3/ 2 NOT IN DIRECTORY RECORD NUMBER 397
```

5. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 4 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 4
SECTION 3/ 4 NOT IN DIRECTORY RECORD NUMBER 425
```

6. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 16 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 16
SECTION 3/ 16 NOT IN DIRECTORY RECORD NUMBER 439
```

7. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 22 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 22
SECTION 3/ 22 NOT IN DIRECTORY RECORD NUMBER 447

8. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 28 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 28
SECTION 3/ 28 NOT IN DIRECTORY RECORD NUMBER 460

9. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 51 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 51
SECTION 3/ 51 NOT IN DIRECTORY RECORD NUMBER 470

10. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 52 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 52
SECTION 3/ 52 NOT IN DIRECTORY RECORD NUMBER 484

11. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 53 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 53
SECTION 3/ 53 NOT IN DIRECTORY RECORD NUMBER 497

12. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 54 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 54
SECTION 3/ 54 NOT IN DIRECTORY RECORD NUMBER 508

13. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 55 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 55
SECTION 3/ 55 NOT IN DIRECTORY RECORD NUMBER 519

14. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT= 91 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 3, MT= 91
SECTION 3/ 91 NOT IN DIRECTORY RECORD NUMBER 529

15. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT=102 (0): Directory (b)

- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3425, MF= 3, MT=102 | |
| SECTION 3/102 NOT IN DIRECTORY | RECORD NUMBER 539 |
16. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT=103 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3425, MF= 3, MT=103 | |
| SECTION 3/103 NOT IN DIRECTORY | RECORD NUMBER 558 |
17. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT=104 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3425, MF= 3, MT=104 | |
| SECTION 3/104 NOT IN DIRECTORY | RECORD NUMBER 573 |
18. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT=105 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3425, MF= 3, MT=105 | |
| SECTION 3/105 NOT IN DIRECTORY | RECORD NUMBER 585 |
19. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT=106 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3425, MF= 3, MT=106 | |
| SECTION 3/106 NOT IN DIRECTORY | RECORD NUMBER 594 |
20. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT=107 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3425, MF= 3, MT=107 | |
| SECTION 3/107 NOT IN DIRECTORY | RECORD NUMBER 606 |
21. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 3, MT=111 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3425, MF= 3, MT=111 | |
| SECTION 3/111 NOT IN DIRECTORY | RECORD NUMBER 622 |
22. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 2 (0): Directory (b)
- | | |
|--|-------------------|
| ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 2 | |
| SECTION 4/ 2 NOT IN DIRECTORY | RECORD NUMBER 634 |
23. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 16 (0): Directory (b)

- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 16 | | |
| | SECTION 4/ 16 NOT IN DIRECTORY | RECORD NUMBER | 789 |
24. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 22 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 22 | | |
| | SECTION 4/ 22 NOT IN DIRECTORY | RECORD NUMBER | 800 |
25. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 28 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 28 | | |
| | SECTION 4/ 28 NOT IN DIRECTORY | RECORD NUMBER | 811 |
26. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 51 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 51 | | |
| | SECTION 4/ 51 NOT IN DIRECTORY | RECORD NUMBER | 822 |
27. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 52 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 52 | | |
| | SECTION 4/ 52 NOT IN DIRECTORY | RECORD NUMBER | 847 |
28. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 53 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 53 | | |
| | SECTION 4/ 53 NOT IN DIRECTORY | RECORD NUMBER | 872 |
29. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 54 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 54 | | |
| | SECTION 4/ 54 NOT IN DIRECTORY | RECORD NUMBER | 895 |
30. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 55 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 55 | | |
| | SECTION 4/ 55 NOT IN DIRECTORY | RECORD NUMBER | 918 |
31. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 4, MT= 91 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 4, MT= 91
SECTION 4/ 91 NOT IN DIRECTORY RECORD NUMBER 941

32. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 5, MT= 16 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 5, MT= 16
SECTION 5/ 16 NOT IN DIRECTORY RECORD NUMBER 965

33. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 5, MT= 22 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 5, MT= 22
SECTION 5/ 22 NOT IN DIRECTORY RECORD NUMBER 1009

34. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 5, MT= 28 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 5, MT= 28
SECTION 5/ 28 NOT IN DIRECTORY RECORD NUMBER 1177

35. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3425, MF= 5, MT= 91 (0): Directory (b)

ERROR(S) FOUND IN MAT=3425, MF= 5, MT= 91
SECTION 5/ 91 NOT IN DIRECTORY RECORD NUMBER 1268

• **psyche** Warnings:

1. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ISOTOPE MASS = 74. L = 1 / STRENGTH FUNCTION IS 1.26501E+00 / STRENGTH FUNCTION 1.26501E+00 / LIES OUTSIDE LIMITS 1.00000E-05 TO 2.00000E-04 (0): URR str. fn.

FILE 2
SECTION 151
ISOTOPE MASS = 74. L = 1
STRENGTH FUNCTION IS 1.26501E+00
STRENGTH FUNCTION 1.26501E+00
... [1 more lines]

2. Non-threshold reaction with Q value differing from PSYCHE's expectations
FILE 3 / SECTION 107 / THE CALCULATED Q 3.54506E+06 DISSAGREES WITH THE GIVEN Q 3.34731E+06 (0): Iffy Q

FILE 3
SECTION 107
THE CALCULATED Q 3.54506E+06 DISSAGREES WITH THE GIVEN Q 3.34731E+06

• **recent** Warnings:

1. Statistical weight of certain L values were incorrect
0: *RRR goof (a)*

```
Calculate Cross Sections from Resonance Parameters (RECENT 2015-1)
=====
Retrieval Criteria-----          MAT
File 2 Minimum Cross Section- 1.0000E-10 (Standard Option)
Reactions with No Background-      Output (Resonance Contribution)
... [332 more lines]
```

- fudge-4.0 Warnings:

1. Missing a channel with a particular angular momenta combination
resonances / resolved (Error # 1): missingResonanceChannel

```
WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 0.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 1.5 and S = 0.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 1.5 and S = 1.5 for "capture"
... plus 1 more instances of this message
```

2. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.37%
```

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 1: (z,n) (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.13%
```

- fudge-4.0 Errors:

1. The spin statistical weights are off, indicating missing channels
resonances / resolved / MultiLevel_BreitWigner (Error # 0): badSpinStatisticalWeights

```
WARNING: The spin statistical weights for L=1 sums to 1.0, but should sum to 3.0. You have too few channels for re
```

2. Calculated and tabulated Q values disagree.
reaction label 7: n[multiplicity:'2'] + Se73 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -12016504.63095856 eV vs -1.20798e7 eV!
```

3. Calculated and tabulated Q values disagree.
reaction label 8: n + H1 + As73 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -8495098.815513611 eV vs -8557330. eV!
```

4. Calculated and tabulated Q values disagree.
reaction label 9: Se75 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 8077506.550933838 eV vs 8027690. eV!
```

5. Calculated and tabulated Q values disagree.
reaction label 10: n + He4 + Ge70 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -4024634.468482971 eV vs -4073190. eV!

6. Calculated and tabulated Q values disagree.
reaction label 11: H1[multiplicity:'2'] + Ge73 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -7371919.436454773 eV vs -7430370. eV!

7. Calculated and tabulated Q values disagree.
reaction label 12: H1 + As74_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -520515.1798553467 eV vs -570533. eV!

8. Calculated and tabulated Q values disagree.
reaction label 13: H2 + As73_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -6270532.714584351 eV vs -6247210. eV!

9. Calculated and tabulated Q values disagree.
reaction label 14: H3 + As72_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -10811509.20484924 eV vs -1.08552e7 eV!

10. Calculated and tabulated Q values disagree.
reaction label 15: He3 + Ge72_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -6436815.850036621 eV vs -6485930. eV!

11. Calculated and tabulated Q values disagree.
reaction label 16: He4 + Ge71_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 3391308.899864197 eV vs 3347310. eV!

- njoy2012 Warnings:

1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
grouppr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 16
only mf4/mf5 provided

2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
grouppr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 22
only mf4/mf5 provided

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
grouppr...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 28
only mf4/mf5 provided

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 91
only mf4/mf5 provided